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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,017	01/15/2002	Petri Nyberg	4925-149	4248

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COHEN, PONTANI, LIEBERMAN & PAVANE
Suite 1210
551 Fifth Avenue
New York, NY 10176

EXAMINER

TAKAOKA, DEAN O

ART UNIT PAPER NUMBER

2817

DATE MAILED: 06/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/047,017

Applicant(s)

NYBERG, PETRI

Examiner

Dean O Takaoka

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 14, 2003, paper no. 7.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 4-11 and 16-33 is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-3 and 12-15 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election of Species II in Paper No. 7 is acknowledged.

Claims 26 – 33 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

The Examiner confirms the Applicant has identified claim 1 as a generic claim and requests consideration of withdrawn claims 4 – 11 and 16 – 25 upon allowance of claim 1.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3 and 13 – 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kintis et al. (U.S. Patent No. 6,049,250).

Claim 1:

Kintis et al. (Fig. 2) shows a circuit for attenuating radio frequency signals, comprising: an input terminal (78); an output terminal (80); and a first attenuation circuit (defined by the Examiner as n amplifier stages) connected between the input and output terminal, the first attenuation circuit comprising; a first transmission line (63) connected serially between the input terminal (78) and output terminal (80) and having a first transmission line impedance (Z_g); a first variable shunt element (FET 68) having one leg connected at a point between the first transmission line (63) and the input terminal (78), the first variable shunt element (68) having a variable impedance (e.g. variable

gain – col. 4, lines 53-64); a second variable shunt element (70) having one leg connected at a point between the first transmission line (63) and the output terminal (80), the first variable shunt element having a variable impedance (for the same reasons as the FET 68); and a control signal terminal (Vdd) connected to each of the first and second variable shunt elements (68, 70) so that an attenuation level of the first attenuation circuit (62) is controllable by a control signal input to the control signal terminal, the first transmission impedance (Z_g) and variable impedances of the first (68) and second (70) variable shunt elements being selected so that an impedance level at the input terminal is within an operable range for all attenuation levels of the first attenuation circuit (col. 3, line 63 to col. 4, line 12 and Figs. 3 – 5).

Claim 2:

Where the transmission line comprises an inductive transmission line (L1) and the variable impedances of the first (68) and second (70) variable shunt elements includes a capacitance (inherent where any FET would inherently have a channel, e.g. n or p channel, capacitance).

Claim 3:

Where each of the first and second variable shunt elements comprises a transistor (FET's 68, 70).

Claim 13:

Further comprising at least one additional circuit portion connected between the second variable shunt element (70) and the output terminal (80), each of the one additional circuit portion comprising an additional transmission line (65) connected in

series with the first transmission line (63) and an additional shunt element having a leg connected at a point between the additional transmission line and the output terminal (where the additional transmission line may comprise 65 as shown in Fig. 7 or any transmission lines of nth circuit stages).

Claim 14:

Where the operable range of the impedance level at the input terminal comprises a range of impedances that exhibit a return loss of at least 10db with a nominal impedance level (col. 5, lines 10-55; e.g. return losses of 12 to 14db).

Claim 15:

Where the radio frequency signals to be attenuated have a frequency of at least 100MHz (Figs. 7 - 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kintis et al. in view of Townley (U.S. Patent No. 4,970,478).

Claim 12:

Kintis et al. teaches the attenuation circuit comprising a first attenuation circuit and control signal but does not teach where an attenuation level of the first attenuation

circuit is controlled only by the control signal input to the control signal terminal connected to the first (68) and second (70) shunt elements.

Townley (Fig. 7) shows a similar attenuation circuit comprising shunt elements (FET's connected to V2) and control signal (V2) where an attenuation level of the attenuation circuit is controlled only by the control signal input to the control signal terminal connected to the first and second shunt elements.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the control signal disclosed by Kintis et al. with the control signal disclosed by Townley. Such a modification would have realized the advantageous benefit of providing a simplified gate and drain bias connection by using only one voltage source thus suggesting the obviousness of the modification.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Weigland – shows a SPDT FET switch.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O Takaoka whose telephone number is (703) 305-6242. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

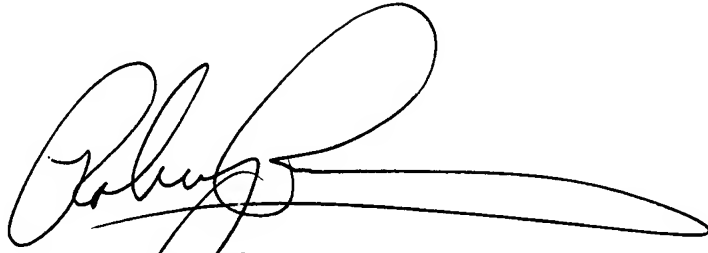
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

dot
June 9, 2003



Robert D. Smith
Senior Patent Examiner
Tech. Serv. Div.